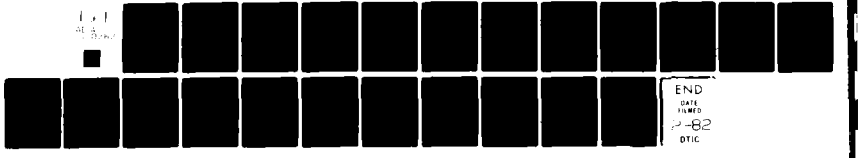
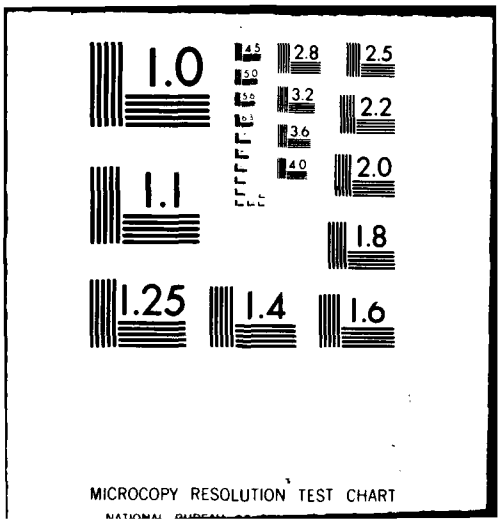
AD-A110 262 ACADEMY OF HEALTH SCIENCES (ARMY) FORT SAM HOUSTON TX--ETC F/G 6/5
CASUALTY ESTIMATION SUBSTUDY: PHYSICAL PROFILES.(U)
SEP 81 P C BREUNLE, T P FURUKAWA, R J JEFFERY
UNCLASSIFIED HCSD-81-012 NL



END
DATE FILMED
2-82
DTIC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
MICROCOPY RESOLUTION TEST CHART

HCSD REPORT #81-012

(1)

LEVEL II

AD A110262

CASUALTY ESTIMATION SUBSTUDY: PHYSICAL PROFILES

LTC Phillip C. Breunle, MSC, Co-Principal Investigator
MAJ Theodore P. Furukawa, MSC, Co-Principal Investigator
LTC Robert J. Jeffery, Royal Australian Army Medical Corps,
Clinical Data Base Consultant

Final Report

September 1981

DTIC
ELECTE
FEB 2 1982
D
A

Health Care Studies Division
Academy of Health Sciences
Fort Sam Houston, Texas 78234

DTIC FILE COPY

This document has been approved for public release and sale; its distribution is unlimited.

40268E
01 19 82 043

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER HCSD Report #81-012	2. GOVT ACCESSION NO. AD-A110 262	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Casualty Estimation Study: Physical Profiles		5. TYPE OF REPORT & PERIOD COVERED Final Jan 81 - Sep 81
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) LTC Phillip C. Breunle, MSC; MAJ Theodore P. Furukawa; LTC Robert J. Jeffery, Royal Australian Army Medical Corps		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Health Care Studies Division Academy of Health Sciences, US Army Fort Sam Houston, TX 78234		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Commander, Concepts Analysis Agency ATTN: CSCA-MC Bethesda, MD 20014		12. REPORT DATE Sep 81
		13. NUMBER OF PAGES 16
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

This document has been approved for public release and sale; its distribution is unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Active Army; Medical; Management; Casualties; Casualty Estimation; Physical Profiles; Wounded in Action; Disease; Nonbattle Injury

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The intent of the "Casualty Estimation Substudy: Physical Profiles" was to determine the types and duration of temporary and permanent physical profiles that can be expected to occur in various combat situations, and, if necessary, to develop an appropriate data-gathering methodology. The approach developed for this study involved the use of a modified Delphi Technique in conjunction with the extensive data base of the AMEDD Theater Casualty Treatment/ Evacuation Analysis Program. The clinical conditions for the Central

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

European scenario were used as the basis for the profile estimations in that this well-developed scenario provided realistic guidelines for profile estimation derived from baseline data on the numbers of personnel expected to be returned to duty from varying levels of medical treatment facility (by clinical condition). Only the T-3/P-3 profile series was considered based on the rationale that the other three profile series did not apply to the study intent.

The study findings were displayed in tables which identified (a) the cumulative proportion of clinical categories generated by wounded-in-action or disease and non-battle injuries which will result in physical profiles, (b) the time expended before return to duty, (c) the duration of the T-3 and P-3 profiles according to the PULHES factors affected, and (d) the level of care at which the profile is assigned.

The continued use of the study methodology, employing a data base model developed using historical data but refined and updated through current expert medical opinion, was recommended.

STUDY SUMMARY

The intent of the "Casualty Estimation Substudy: Physical Profiles" was to determine the types and duration of temporary and permanent physical profiles that can be expected to occur in various combat situations, and, if necessary, to develop an appropriate data-gathering methodology. The approach developed for this study involved the use of a modified Delphi Technique in conjunction with the extensive data base of the AMEDD Theater Casualty Treatment/Evacuation Analysis Program.

The clinical conditions for the Central European scenario were used as the basis for the profile estimations in that this well-developed scenario provided realistic guidelines for profile estimation derived from baseline data on the numbers of personnel expected to be returned to duty from varying levels of medical treatment facility (by clinical condition). Only the T-3/P-3 profile series was considered based on the rationale that the other three profile series did not apply to the study intent.

The study findings were displayed in tables which identified (a) the cumulative proportion of clinical categories generated by wounded-in-action or disease and non-battle injuries which will result in physical profiles, (b) the time expended before return to duty, (c) the duration of the T-3 and P-3 profiles according to the PULHES factors affected, and (d) the level of care at which the profile is assigned.

The continued use of the study methodology, employing a data base model developed using historical data but refined and updated through current expert medical opinion, was recommended.

Accession For
NTIS GRA&I
DTIC TAB
Letter on file
DTIC COPY INSPECTED 1
A

ACKNOWLEDGEMENTS

The following persons contributed their time and talents in assisting in the completion of this study.

Study advisory group panelists from Brooke Army Medical Center included COL Steven Thomas, MC, Chief, Orthopedic Service; COL Ronald Blanck, MC, Chief, Department of Medicine; and LTC Robert Slay, MC, Assistant Chief, Emergency Medicine Service.

Consultants on conceptual and statistical matters included LTC(P) James J. James, MC, Chief, Health Care Studies Division; CPT David W. Talafuse, FA, Operations Analysis Office; and Dr. A. David Mangelsdorff, Ph.D., Health Care Studies Division. Data compilers included 1LT Heshmatollah Ansari-Tadi, MSC, Operations Analysis Office; and SSG C. Carl Hubay and Mrs. Patricia Twist, DAC, Health Care Studies Division.

Typing support personnel included Miss Patsy O'Brien, Mrs. Patricia Gilbert, DAC, and SP4 Tammy Morter, Health Care Studies Division.

TABLE OF CONTENTS

LIST OF TABLES AND ANNEX

CASUALTY ESTIMATION SUBSTUDY: PHYSICAL PROFILES

1. INTRODUCTION.

a. Statement of the Problem. It is essential for reliable casualty estimation to determine the types and durations of soldiers returning to duty after having been wounded, sick, or injured.

b. Objective. The study objective was to determine the types and duration of temporary and permanent physical profiles that can be expected to occur in various conventional and integrated combat situations by patient status and type of casualty.

c. Background.

(1) This substudy was one facet of a larger, comprehensive study, titled Casualty Estimation Study (CES). On 23 December 1980, Headquarters, Department of the Army, directed that this comprehensive study be conducted for the purpose of developing a reliable and analytically rigorous methodology for estimating Army wartime casualties. Inherent to the study was the necessity to include several factors which impact on fighting effectiveness. Heretofore, casualty estimation planning factors have included little or no data on the impact of physical profiles which can detract from the overall effectiveness of the fighting force. This detraction can result indirectly when temporary incapacities lower the total expected efficiency of an individual or directly when the degree of incapacitation necessitates replacement. Accordingly, physical profiles were considered to be an essential ingredient in current and future studies relating to the production of overall casualty estimates.

(2) Investigation with DA agencies revealed that there was no central data base of physical profile data maintained in medical or administrative files. Temporary profiles, which are maintained in MEDCEN or MEDDAC short-term in clinical suspense files and personal medical records, are subsequently destroyed. Likewise, permanent profile data, although maintained in personal health records, are not centralized in any one medical or administrative index file. Accordingly, retrospective analysis of profile data was not possible.

(3) Prospective analysis of profile factors, although feasible, was currently considered impractical for this study due to the lengthy time factor involved with data compilation and the non-comparability of the combat and peacetime environments regarding the granting of profiles and the administration of profile recipients.

2. METHODOLOGY.

a. Overview. The data-gathering approach in this substudy involved the use of a modified Delphi Technique in conjunction with the extensive data base of the recently compiled AMEDD Theater Casualty Treatment/Evacuation Analysis Program prepared in November 1980 by the Directorate of Combat Developments and Health Care Studies for the purpose of evaluating the total

requirements for medical support in a theater of operations. This data base has a total of 202 clinical conditions for which a percentage distribution by specific condition has been established for (1) single and multiple battle casualties, (2) non-battle casualties, (3) diseases. (4) female specific disorders, and (5) combat stress. This percentage distribution when coupled with battle intensity and disease and non-battle injury estimates provides the basis for the determination of a total incidence of medical casualties over a given period of time. The completeness of the analysis of these 202 conditions, which are further subdivided by severity into 309 categories, provided an excellent study base for analysis by an expert panel to determine the types and durations of physical profiles that can be expected in a variety of combat and geographical scenarios.

b. Procedures.

(1) Literature search. Under the provision of AR 5-5, a comprehensive literature search was conducted. This review included the Defense Technical Information Center (search control number 002206, with key word "casualties estimates"), Defense Logistics Studies Information Exchange (data base search number 2812-81, with key word "casualty estimation"), and Medlars II (search number S2142554, with key words "physical profile" and "combat disorders"). The search revealed that no profile studies have been conducted which were in the context of, or applicable to, the scope of this study.

(2) Agreement on study boundaries. Pursuant to extensive staffing input, coordination with Casualty Estimation Study (CES) action offices, and internal study developmental processes, it was viewed essential that certain specific conditions be applied to the scope and methodology of the physical profile substudy to assure the generation of meaningful and useful data for casualty estimation scenarios. These conditions, which are predicated upon realistic constraints as well as current medical rationale inherent to the procedures of the physical profile system in the combat environment, were as follows:

(a) Profile estimates were based upon expert medical opinion (see study advisory group below) applied against specific clinical conditions by degree of severity (severe and moderate) and the expected rate per one hundred cases of that clinical condition occurring in outpatients and inpatients returning from varying levels of medical treatment. The rates were derived from the Clinical Data Base for the computer portrayal of casualty management being implemented in the Planning Module of the Medical Support System Simulation Model, noted above.

(b) The clinical conditions for the European scenario were used as the basis for the profile estimations in that this well-developed scenario provided realistic guidelines for profile estimation derived from baseline data on the numbers of personnel expected to be returned to duty from varying levels of medical treatment facility (by clinical condition). Although similar data for area-specific clinical conditions (specifically disease conditions) in other geographic regions of the world are not currently available, identification of other area-specific medical conditions can be initiated and developed on the same rate per hundred cases basis as in the present study. Accordingly, casualty planners ultimately will be able to use the rates developed for any geographic area of the world by applying the appropriate mix of clinical conditions against overall personnel strengths sustaining combat casualties at rates determined by type, intensity and duration of conflict, etc.

(c) Only the "3" profile series was considered in this study, based on the rationale that the other three profile series do not apply to the study intent:

1 A "1" profile identifies an individual as fully fit for combat duty.

2 A "2" profile also identifies that an individual, with rare exception, is fully fit for duty. For example, a lower extremities ("L") T-2 profile is characterized by slightly limited mobility of joints, muscular weakness or other musculo-skeletal defects which do not prevent moderate marching, climbing, running, digging, or prolonged effort.

3 A "4" profile identifies an individual as unfit for duty. In the latter condition, an individual would be medically evacuated out-of-theater, rather than returned to duty in-theater.

(d) Each of the 309 clinical categories was evaluated in terms of the number "T" (temporary profiles) and "P" (permanent profiles) by profile series "3" for each of the PULHES factors. For cases with multiple incapacities, the appropriate profile designated was issued on the PULHES factor indicating only the most significant physical incapacity for the specific case. This precluded "double accounting," which could significantly skew the profile percentages, if more than one PULHES factor were to be considered per case.

(e) Profile duration-times were calculated for "T" profiles only since by definition "P" profiles are permanent. The distribution of duration-times per class of "T" profiles were given in three categories: 1) less than one week, 2) one to four weeks, and 3) greater than four weeks.

(3) Study advisory group (SAG). Upon receipt of concurrence from CES action offices on the use of the focus provided by the study boundaries described above, appointment of a SAG was requested from Headquarters, Health Services Command. This resulted in the establishment of a panel of experienced physicians in the specialties of orthopedic surgery, internal medicine, and emergency medicine. The SAG was empaneled in mid-May 1981 to review the 309 categories, and the SAG members, using their professional judgment, provided the following physical profile estimation information:

(a) The rate (per 100 cases) of T-3 and P-3 profiles for each clinical condition (WIA + DNBI) based on the European scenario, and

(b) The duration of the T-3 profiles for each clinical condition.

(4) Profile rates. For each clinical category, the rate of T-3 and P-3 profiles and the duration of the T-3 profiles, as judged by the SAG, were then summed with comparable profiles of the same duration. The resulting profile totals (according to return-to-duty after like periods of absence) were used in separately calculating the rates for wounded-in-action (WIA) and disease and non-battle injuries (DNBI). The study anticipated that a significant number of the 309 clinical categories of patients had both WIA and DNBI as the sources for patient casualties.

3. FINDINGS AND DISCUSSION.

a. Clinical Conditions and Categories. Using the Clinical Data Base, the study considered 202 clinical conditions of which 107 conditions (or 53.0%) had both moderate and severe types, for a total of 309 clinical categories.

WIA patients constituted all or part of 182 (58.9%) of the 309 categories. DNBI patients constituted all or part of 278 (90.0%) of the 309 categories. These 278 DNBI-constituted categories consisted of 164 non-battle injury categories, 102 disease categories, 10 female specific categories, and two combat stress psychiatric categories. There were 152 (49.2%) of the 309 categories with both WIA and DNBI sources for patient casualties.

This information is summarized in Table 1.

b. Physical Profile Estimation Information. The Clinical Data Base projected that 103 (33.3%) of the 309 categories would have no return to duty within the theater of operations (that is, recovery would exceed the evacuation policy or death would occur). Of the remaining 206 categories with some proportion of theater patients who return to duty, 112 (36.2%) of the total 309 categories were judged by SAG panelists to have some proportion of patients return to duty with a T-3 or P-3 in one or more PULHES factors. An example of one of the 309 categories submitted to the SAG panel for judgment is found in Annex A.

c. Profile Rates.

(1) Wounded-in-action (WIA). The rates of T-3 and P-3 profiles and the duration of the T-3 profiles, based on the clinical judgment of SAG panelists, were used to calculate the proportion of every 100 WIA who would return to duty with a T-3 or P-3 profile in the time periods of: within seven days, between eight and 14 days, between 15 and 28 days, between 29 and 42 days, and between 43 and 60 days. (These periods refer to the time between injury and return to duty, or the period of treatment and hospitalization.)

The results are presented in Table 2. The five time periods are represented in the columns. The six profile factors (PULHES) are represented in the rows. Each factor is further divided into duration of T-3 profiles and P-3 profiles which are assigned upon return to duty.

Using the Central European scenario as the model, every 100 WIA will generate 8.795 patients who will return to duty with a T-3 or P-3 profile: 4.094 (46.5%) will return within seven days, 1.197 (13.6%) will return within 8-14 days, 0.976 (11.1%) will return within 15-28 days, 1.497 (17.0%) will return to duty within 29-42 days, and 1.031 (11.7%) will return to duty within 43-60 days. Temporary profiles (T-3) account for 8.511 (96.8%) of the total, and permanent profiles (P-3) account for 0.284 (3.2%).

The total WIA return to duty, broken down according to most significant physical profile functional factors affected, include 3.987 (45.3%) "P" (physical capacity), 1.455 (16.5%) "U" (upper extremities), 3.263 (37.1%) "L" (lower extremities), and .0900 (1.0%) "H" (hearing-ears).

The total WIA return to duty, broken down by assigned duration of their profiles, are 3.677 (41.8%) less than a week, 4.332 (49.3%) one to four weeks, 0.502 (5.7%) greater than four weeks, and 0.284 (3.2%) permanent.

The actual number of WIA per troop strength per day can be expected to vary considerably depending upon weaponry and intensity of battle. These factors should be taken into account when calculating WIA rates for different theaters of operations and for different engagements within a theater. The Department of the Army must determine the number of WIA for a given scenario in order to project the number of T-3/P-3 profiles per troop strength. For example, in the conventional weaponry European scenario in which 330 WIA per division slice per day is an accepted estimate, there will be 29.0 T-3/P-3 profiles (330 ÷ 100 x 8.795) generated per division slice (38,500 troops) per day, or only 0.7 T-3/P-3 profiles per 1000 troops per day.

(2) Disease and non-battle injury (DNBI). The rates of T-3 and P-3 profiles and the duration of the T-3 profiles, based on the clinical judgment of SAG panelists, were used to calculate the proportion of every 100 DNBI who would return to duty with a T-3 or P-3 profile in the time periods of: within seven days, between eight and 14 days, between 15 and 28 days, between 29 and 42 days, and between 43 and 60 days. (These periods refer to the time between injury and return to duty, or the period of treatment and hospitalization.)

The results are presented in Table 3. The five time periods are represented in the columns. The six profile factors (PULHES) are represented in the rows. Each factor is further divided into duration of T-3 profiles and P-3 profiles which are assigned upon return to duty.

Using the Central European scenario as the model, every 100 DNBI will generate 27.197 patients who will return to duty with a T-3 or P-3 profile: 21.423 (78.8%) will return within seven days, 1.376 (5.1%) will return within 8-14 days, 2.509 (9.2%) will return within 15-28 days, 1.679 (6.2%) will return within 29-42 days, and 0.210 (0.1%) will return within 43-60 days. Temporary profiles (T-3) account for 26.148 (96.1%) of the total, and permanent profiles (P-3) account for 1.049 (3.9%).

The total DNBI return to duty, broken down according to physical profile functional factors affected, include 16.637 (61.2%) "P" (physical capacity), 2.516 (9.3%) "U" (upper extremities), 8.043 (29.6%) "L" (lower extremities), and 0.001 (less than 0.1%) "E" (hearing-ears).

The total DNBI return to duty, broken down by assigned duration of their profiles, are 17.758 (65.3%) less than a week, 8.053 (29.6%) one to four weeks, 0.337 (1.2%) greater than four weeks, and 1.049 (3.9%) permanent.

The actual number of DNBI per troop strength per day can be expected to vary little by comparison to WIA rates. Climate, terrain, and types of weaponry will influence DNBI rates to a limited extent, and these factors may be taken into account when calculating rates for different theaters of operations. For example, in the Central European scenario, in which 29.8 DNBI per 1000 troops per day is an accepted estimate, there will be 8.1 T-3/P-3 profiles (29.8 x 27.197 ÷ 100) generated per 1000 troops per day.

(3) Notable findings.

(a) In both WIA- and DNBI-generated clinical categories, the preponderance of T-3/P-3 profiles will involve the factors of physical capacity (P), upper extremities (U), and lower extremities (L), rather than hearing-ears (H), vision-eyes (E), or psychiatric (S).

(b) Almost half of the WIA T-3/P-3 and almost 80% of the DNBI T-3/P-3 will return to duty within seven days of the initiation of medical treatment.

(c) Over 90% of both WIA- and DNBI-generated T-3/P-3 will be given profiles of less than seven days or 1-4 weeks. WIA profiles of less than seven days and of 1-4 weeks constitute 41.8% and 49.3% of WIA profiles, respectively, and DNBI profiles of less than seven days and of 1-4 weeks constitute 65.3% and 29.6%, respectively.

(d) In both WIA- and DNBI-generated clinical categories, the preponderance of T-3/P-3 profiles will be generated among patients treated and released from hospitals rather than among those patients seen solely as outpatients. As displayed in Table 4, among all casualties receiving T-3/P-3 profiles, 96.6% of the WIA and 80.6% of the DNBI receive their profiles upon discharge from hospitals.

4. CONCLUSIONS.

a. Using the Clinical Data Base of the AMEDD Theater Casualty Treatment/ Evacuation Analysis Program (developed for the Central Eurpoean scenario) and employing the expert clinical opinion of a panel of experienced physicians, the study determined the types and duration of the relevant temporary (T-3) and permanent (P-3) physical profiles that can be expected in theaters of operations.

b. The tables which display the study findings can be used to identify what cumulative proportion of every 100 WIA- or DNBI-generated clinical categories will result in physical profiles, the time expended before return to duty, the duration of the T-3 and P-3 profiles according to the PULHES factors affected, and the level of care at which the profile is assigned. In order to calculate profile rates per troop strength, however, additional information is needed concerning projected WIA rates as well as climatic and terrain features of theaters of operations other than Central Europe.

5. RECOMMENDATIONS.

a. A clinical data base model which is developed using historical data and refined and updated periodically through expert opinion, such as the AMEDD Theater Casualty Treatment/Evacuation Analysis Program used in the present study, should be accepted as the best available methodology for obtaining a reasonable approximation of physical profile estimations in the absence of directly applicable retrospective and prospective documentation.

b. Given the relatively small proportion of relevant profiles (T-3/P-3) projected by the findings, especially those generated by WIA, the efficacy of using physical profile data as part of casualty estimation in the future should be critically assessed. If more precise supportable figures are required, additional data-gathering should be conducted periodically among medical specialists with experience in assigning profiles in combat.

Table 1

CLINICAL CONDITIONS AND CATEGORIES
(Source: Clinical Data Base)

	N	% of 309
Clinical conditions	202	-
With both moderate and severe types	107	53.0
With either moderate or severe types	85	47.0
Clinical categories	309	100.0
WIA-source categories	182	58.9
DNBI-source categories	278	90.0
Disease	(102)	(33.0)
NBI	(164)	(53.1)
Female specific	(10)	(3.2)
Combat stress	(2)	(0.6)
Categories with both WIA-source and DNBI-source	152	49.2

Table 2

WOUNDED-IN-ACTION*
(Per 100 WIA)

PROFILE (Weeks)		PROPORTION RETURNING TO DUTY WITH T-3 OR P-3					
		Within 7 days	8 - 15 days	15 - 28 days	29 - 42 days	43 - 60 days	TOTAL
P	< 1	2.47700	0.13900	0.00000	0.06600	0.00000	2.68200
	1-4	.07900	.70500	.17200	.32300	.00400	1.28300
	> 4	.00000	—	.02200	—	—	.02200
	P	—	—	—	—	—	—
U	< 1	.35100	.01700	.03600	—	—	.40400
	1-4	.1650	.01800	.01600	.01200	.42000	.63100
	> 4	.00100	—	—	.23800	.00900	.24800
	P	—	—	—	.01200	.16000	.17200
L	< 1	.49300	.01800	.02500	.00400	.05100	.59100
	1-4	.45100	.25200	.48500	.84200	.34000	2.37000
	> 4	.02900	.04800	.10600	—	.03700	.22000
	P	—	—	.07200	—	.01000	.08200
H	< 1	—	—	—	—	—	—
	1-4	.04800	—	—	—	—	.04800
	> 4	—	—	.01200	—	—	.01200
	P	—	—	.03000	—	—	.03000
E	< 1	—	—	—	—	—	—
	1-4	—	—	—	—	—	—
	> 4	—	—	—	—	—	—
	P	—	—	—	—	—	—
S	< 1	—	—	—	—	—	—
	1-4	—	—	—	—	—	—
	> 4	—	—	—	—	—	—
	P	—	—	—	—	—	—
TOTAL		4.09400	1.19700	.97600	1.49700	1.03100	8.79500

*Based upon Central European scenario.

Table 3

DISEASE AND NON-BATTLE INJURY*
(Per 100 DNBI)

PROFILE (Weeks)		PROPORTION RETURNING TO DUTY WITH T-3 OR P-3					
		Within 7 days	8 - 15 days	15 - 28 days	29 - 42 days	43 - 60 days	TOTAL
P	< 1	13.7320	.2330	.0600	.0080	—	14.0330
	1-4	1.0630	.3350	.2170	.0930	.0900	1.7170
	> 4	—	—	.0370	.0080	—	.0450
	P	.0360	.0340	.0440	.727	.0010	.8420
U	< 1	1.1270	.0170	.1890	—	—	1.3330
	1-4	.7290	.0870	.1240	.0520	.0200	1.0120
	> 4	.0620	—	—	.0190	.0230	.1040
	P	—	—	—	.0520	.0150	.0670
L	< 1	2.3000	.0700	.0800	.0110	.0030	2.3920
	1-4	2.3310	.5890	1.7040	.6820	.0180	5.3240
	> 4	.0430	.0110	.1090	—	.0250	.1880
	P	—	—	.0160	.0270	.0960	.1390
H	< I	—	—	—	—	—	—
	1-4	—	—	—	—	—	—
	> 4	—	—	—	—	—	—
	P	—	—	—	—	—	—
E	< 1	—	—	—	—	—	—
	1-4	—	—	—	—	—	—
	> 4	—	—	—	—	—	—
	P	—	—	.0010	—	—	.0010
S	< 1	—	—	—	—	—	—
	1-4	—	—	—	—	—	—
	> 4	—	—	—	—	—	—
	P	—	—	—	—	—	—
TOTAL		21.4230	1.3760	2.5090	1.6790	.2100	27.1970

*Based upon Central European scenario.

Table 4

LEVEL OF CARE AT WHICH
T-3/P-3 PROFILE IS ASSIGNED

Clinical Category	N	Outpatient*	Hospital**
WIA	100.000	3.438	96.562
DNBI	100.000	19.401	80.599
NBI	22.078	(2.677)	
Disease	73.593	(16.570)	
Female specific	4.329	(0.154)	
Combat stress	0.000	(0.000)	

* Includes Battalion Aid Station, Medical Company Clearing Station, Headquarters and Support Company.

** Includes Combat Support Hospital, Mobile Army Surgical Hospital, Evacuation Hospital, General Hospital, Convalescent Center.

REFERENCES

1. DA PAM 5-5, Guidance for Study Sponsors and Study Advisory Groups, October 1976.

2. AR 5-5, The Army Study System, 1 September 1977.

3. CSM 79-15-34, HQDA, 12 September 1979, Subject: Mobilization and Wartime Pretrained Manpower.

4. Letter, DACS-DMO, HQDA, 14 December 1979, Subject: Quality of Army Studies - Study Advisory Groups.

5. Study Report, ACN 57793, HQ TRADOC, Casualty Estimation Model Study - Final Report, July 1980.

6. AR 40-501, with changes, Chapter 9, Standards of Medical Fitness, 15 August 1980.

7. Booklet, FY 1981 - The Army Study Program, 9 October 1980.

8. Program document, AMEDD Theater Casualty Treatment/Evacuation Program Analysis, Directorate of Combat Developments and Health Care Studies, US Army Academy of Health Sciences (HSA-CDC), November 1980.

9. Letter, 5-80-8, DAMO-FDF(M), HQDA, 23 December 1980, Subject: Casualty Estimation Study (CES).

10. Letter, DASG-HCD-S, HQDA, 15 January 1981, Subject: Casualty Estimation Study.

11. Letter, HSA-CHC, HCSD, 21 April 1981, Subject: Addendum No. 1: Casualty Estimation Physical Profile Sub-study (CES:PP).

12. Letter, DAMO-FDF, HQDA, 22 April 1981, Subject: Casualty Estimation Study (CES).

13. Letter, HSPA, HQ HSC, 4 May 1981, Subject: Tasking of Study Advisory Group (SAG) for Casualty Estimation Study (CES).

ANNEX A,

Physical Profile Estimation Information:
Category Illustration

(60-day theater evacuation policy)

PHYSICAL PROFILE ESTIMATION INFORMATION: CATEGORY ILLUSTRATION
(60-day theater evacuation policy)

On the following page is a sample of the worksheet used by SAC panelists. It represents one of 309 categories considered in the study.

The AMEDD Theater Casualty Treatment/Evacuation Analysis Program provided the information in rows one (medical condition); two (severity); three (average period of hospitalization or held for treatment, in hours); four (proportion of 100 patients with the given condition who return to duty at specific echelons of the medical support system*); and five (echelons). The remaining rows were used by the panelists to specify the proportion of patients treated at various echelons who, in the panelists' judgments, would receive Temporary 3 or Permanent 3 (T3 or P3) profiles upon return to duty from that echelon (broken out by physical profile functional PULHES factor and the amount of time profile would be in effect).

The sample worksheet results may be summarized as follows: (1) Medical condition = asthma. (2) Severity = moderate. (3) Period of hospitalization or held for treatment = varies depending upon echelon (60-day theater evacuation policy).* (4) Proportion returning to duty = 10% at BAS, 30% at HQ & SPT CO, 30% CSH, 10% CONV CTR; the remaining 20% would require recovery time which exceeds the evacuation policy or would involve death prior to departing the theater. (5) In the panelists' judgments, of every 80 asthma (moderate) patients who would return to duty within the theater of operations, 55 would be given a T3 or P3 profile: five would be given a "P" (for "physical capacity") profile of T3 for less than one week at the BAS, 10 for one-to-four weeks at the HQ & SPT CO, 10 for one-to-four weeks at the CSH; 10 would be given a "P" profile of P3 at the HQ & SPT CO, another 10 at the CSH, and another 10 at the CONV CTR. No patients with this condition alone would receive T3 or P3 on any other PULHES factor.

*NOTE: Patients do not necessarily pass through all listed echelons of the medical support system in a successive manner. Admission to certain facilities precludes admission to other facilities. For example, the time spent at the CONV CTR for hospitalization (240 hours) must be added to the time spent at certain lower echelon facilities but not to others.

MEDICAL CONDITION: ASTHMA

MODERATE- MODERATE SYMPTOMS

AVG PERIOD OF HOS OR MED'L EXM (HRS)		0	0	0	72	96	96	96	48	240	
% RTD		.0	10.0	.0	33.3	33.0	.0	.0	.0	10.3	
PHYSICAL PROFILE / FUNCTIONAL CAPACITY	TIME IN WEEKS	SN MEDIC	BY ARD STATION	MED CON CLR	MED SPT CO	CSH	WASH	EVAC HOSP	GEN HOSP	CONV CTR	
P	21		5								
	1-5				10	10					
	56										
	PERM				10	10				10	
U	21										
	1-5										
	56										
	PERM										
L	21										
	1-5										
	56										
	PERM										
M	21										
	1-5										
	56										
	PERM										
E	21										
	1-5										
	56										
	PERM										
S	21										
	1-5										
	56										
	PERM										

DISTRIBUTION:

Defense Documentation Center (2)

HQDA (DASG-HCD-S)

Dir, Joint Medical Library, Offices of The Surgeons General, USA/USAF, The Pentagon, Rm 1B-473, Washington, DC 20310 (1)

AHS, Stimson Library (1)


DAT
FILM